

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Michael Rosenbauer et al
Application Number: 10/583,700
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Group Art Unit: 1792
Examiner: Samuel A. Waldbaum
Title: ELECTRIC INTERFACE FOR WATER-BEARING
HOUSEHOLD DEVICES

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Pursuant to 37 CFR 1.192, Appellants hereby file an appeal brief in the above-identified application. This Appeal Brief is accompanied by the requisite fee set forth in 37 CFR 1.17(f).

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(1) REAL PARTY IN INTEREST

The real party in interest is BSH Bosch und Siemens Hausgeräte GmbH.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS

Claims 13-16, 18-20, and 22-24 are pending in the present application. Claims 1-12, 17, and 21 were canceled. Claim 13 is independent. The final rejections of claims 13-16, 18-20, and 22-24 are being appealed.

(4) STATUS OF AMENDMENTS

There are no outstanding Amendments. The Advisory Action dated May 21, 2009, entered the Amendment filed on May 11, 2009.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

An exemplary embodiment of the claimed invention, as recited by, for example, independent claim 13, is directed to an electric interface for water-bearing household devices comprising

an electronic circuit board (1) for operatively mounting to the water-bearing household device (see, e.g., page 5, lines 6-9; paragraph [019]);

a program control (see, e.g., page 5, lines 9-12; paragraph [019]);
at least one magnetic valve (2) mounted to the circuit board (1) in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough (see, e.g., page 5, lines 6-14; paragraph [019]); and
at least one electronic component (6) for controlling the at least one magnetic valve (2) with the at least one electronic component (6) being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control (see, e.g., page 5, lines 8-14 and 21-23; paragraphs [019], [020]).

In conventional water-bearing household devices, such as in the Richardson et al reference described below, the magnetic valves and sensors commonly are connected to the program control which is located at another location in the water-bearing household device, using a cable form and plug contacts to appropriately control the magnetic valves and sensors according to an operating sequence. The known operating controls have the disadvantage that each magnetic valve and each sensor must be separately connected to the program control. Since the positioning of the magnetic valves and sensors in the hydraulic circuits is dependent on the hydraulic or component-specific circumstances of the water-bearing household device, the contacting of the electronic, hydraulic and mechanical components of the operating control must be made using a widely branching cable form. See, e.g., page 1, lines 10-28; paragraphs [002], [003].

In stark contrast, the present invention provides an electric interface for water-bearing household devices including at least one magnetic valve (2) mounted to the circuit board (1) in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough (see, e.g., page 5, lines 6-14; paragraph [019]); and at least one electronic component (6) for controlling the at least one magnetic valve (2) with the at least one electronic component (6) being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is

connected to the program control (see, e.g., page 5, lines 8-14 and 21-23; paragraphs [019], [020]), as recited in independent claim 13.

In this manner, the present invention integrates the hydraulic magnetic valves together with the electronic components required to control the magnetic valves in a component group which is connected to the program control of the water-bearing household device, thereby reducing the necessary electrical connections between the program control, the individual magnetic valves and the electronic components for controlling the magnetic valves, and providing a modular interface between the hydraulic and the electronic area in a component group. As a result, the complexity of the cable form for the electrical connection of the hydraulic and electronic components can be reduced, thereby providing an inexpensive, flexible and modular arrangement of the hydraulic and electrical components for the operational control of the water-bearing household device. See, e.g., page 1, lines 30-31; page 2, lines 1-2; paragraph [004]; and page 2, lines 14-23; paragraph [007].

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- a. Whether claims 13-16 are unpatentable under 35 U.S.C. § 103(a) over the Richmond et al reference (U.S. 5,873,518).
- b. Whether claims 18-20 and 22-23 are unpatentable under 35 U.S.C. § 103(a) over the Richmond et al reference in view of the Hengelein et al reference (U.S. 2004/0140677).
- c. Whether claim 24 is unpatentable under 35 U.S.C. § 103(a) over the Richmond et al reference, the Hengelein et al reference, and further in view of in view of the Faunce reference (U.S. 6,319,015) and the Roese reference (U.S. 2005/0106924).

(7) ARGUMENT

- a. Claims 13-16 are patentable over the Richmond et al reference.

The Office Action rejects claims 13-16 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Richmond et al reference.

Appellants respectfully traverse this rejection.

Appellants respectfully submit that none of the applied references teaches or suggests the features of the claimed invention including at least an electric interface for water-bearing household devices including at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough, and at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control, as recited in independent claim 13. See, e.g., page 5, lines 6-14 and 21-23; paragraphs [019], [020]).

As explained above, these features are important for reducing the complexity of the cable form for the electrical connection of the hydraulic and electronic components, thereby providing an inexpensive, flexible and modular arrangement of the hydraulic and electrical components for the operational control of the water-bearing household device. See, e.g., page 1, lines 30-31; page 2, lines 1-2; paragraph [004]; and page 2, lines 14-23; paragraph [007].

The Richmond et al reference very clearly does not teach or suggest these features. Indeed, the Office Action specifically acknowledges that the Richmond et al reference lacks the teaching of these features, as recited in claim 13.

However, the final Office Action alleges that the Richmond et al reference teaches that the valves are electrically coupled to the circuit board (Fig. 10, col. 7, lines 4-50). The final

Office Action makes the conclusory statement that it would have been obvious to have mounted the valve structure with the sensor to the circuit board in the apparatus of the Richmond et al reference to have reduced the need for coupling wire and connectors. Office Action, Pages 3-4, bridging paragraph.

Contrary to the assertions in the Office Action, Appellants respectfully submit that it would not have been obvious to modify the applied references in the manner alleged. Appellants respectfully submit that one of ordinary skill in the art would not have had an apparent reason to modify the disclosure of the Richmond et al reference to arrive at the claimed invention as a whole. Moreover, the Office Action does not establish an adequate rationale for making such a modification. Instead, Appellants respectfully submit that the assertions in the Office Action merely amount to conclusory statements.

Appellants respectfully submit that such conclusory statements are insufficient to provide a *prima facie* case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." (In re Kahn, 441 F.3d 977, 988 (CA Fed. 2006) cited with approval in KSR).

The Office Action fails to provide any articulated reasoning with any rationale underpinning to support a legal conclusion of obviousness. As such, the Office Action fails to present a *prima facie* case for obviousness. The Office Action has provided no articulated reasoning to modify the teachings of the Richmond et al reference to arrive at the claimed invention, except from using Appellant's invention as a template through hindsight reconstruction of Appellant's claims.

The Advisory Action dated May 21, 2009, appears to attempt to make up for the deficiencies in the rejection by asserting that it allegedly "is well within in the skill level of

one of ordinary skill level to want to *reduce the number of components* in a system (sic), by changing connection elements and *rearranging elements* thus allow for the use of fewer components in construction” and that “it would have been obvious to one of ordinary skill in the art to have connected the electromagnetic valves directly to the circuit board thus removing the need for connection wires thus reducing the number of components.”

The Advisory Action does not cite any support for these assertions. Therefore, Appellants respectfully submit that these assertions in the Advisory Action merely amount to conclusory statements similar to those set forth in the final Office Action. As explained above, such conclusory statements are insufficient to provide a *prima facie* case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

Appellants respectfully submit that the Advisory Action appears to be attempting to rely on case law to support the obviousness rejection. However, Appellants note that, if the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection. M.P.E.P. § 2144.04.

In this case, Applicants’ disclosure clearly has demonstrated the criticality of these claimed features. For example, as explained above, the features of the claimed invention are important for reducing the complexity of the cable form for the electrical connection of the hydraulic and electronic components, thereby providing an inexpensive, flexible and modular arrangement of the hydraulic and electrical components for the operational control of the water-bearing household device. See, e.g., page 1, lines 30-31; page 2, lines 1-2; paragraph [004]; and page 2, lines 14-23; paragraph [007]. Therefore, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.

Moreover, Appellants respectfully submit that one of ordinary skill in the art would not have modified the teachings of the Richmond et al in the manner alleged. Indeed, the Richmond et al reference has absolutely nothing to do with solving these problems.

Contrary to the assertions in the Office Action, Appellants respectfully submit that the Richmond et al reference does not teach or suggest anything at all that is even remotely related to an electric interface for water-bearing household devices including at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough, and at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control, as recited in independent claim 13.

Instead, the Richmond et al reference merely discloses a valve body having valve actuators thereon as well as a pressure sensor formed therewith. However, the Richmond et al reference does not disclose or suggest that magnetic valves are mounted to a circuit board with the circuit board being operatively mounted to the water bearing household device. Further, the Richmond et al reference does not disclose or suggest that there is at least one electronic component for controlling the magnetic valve mounted to any circuit board, or that the control is mounted to the valve body of the Richmond et al reference. Indeed, the Richardson et al reference would suffer from the very same problems as the conventional art as explained in the present application.

Accordingly, the Richmond et al reference does not disclose or suggest the subject matter defined by independent claim 13 including an electric interface for water-bearing household devices including at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough, and at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control.

Appellants respectfully request reversal of this rejection.

- b. Claims 18-20 and 22-23 are patentable over the Richmond et al reference in view of the Hengelein et al reference.

The Office Action rejects claims 18-20 and 22-23 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Richmond et al reference in view of the Hengelein et al reference.

Appellants respectfully traverse this rejection.

None of the applied references teaches or suggests the features of the claimed invention, as recited in claim 13, from which claims 18-20 and 22-23 depend.

The Hengelein et al reference does not remedy the deficiencies of the Richmond et al reference. Indeed, the Hengelein et al reference is not relied upon for these features.

As shown in FIGS. 6 and 10, the Hengelein et al reference merely is directed to a door-locking assembly or a door latch suited for a washing machine door (see abstract).

In stark contrast to the teachings of the Hengelein et al reference, independent claim 13 recites an electric interface for water-bearing household devices including at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough, and at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control.

As explained above, these features are important for reducing the complexity of the cable form for the electrical connection of the hydraulic and electronic components, thereby providing an inexpensive, flexible and modular arrangement of the hydraulic and electrical components for the operational control of the water-bearing household device.

Thus, the Hengelein et al reference does not remedy the deficiencies of the Richmond et al reference.

None of the applied references discloses or suggests the subject matter defined by independent claim 13, from which claims 18-20 and 22-23 depend.

Appellants respectfully request reversal of this rejection.

c. Claim 24 is patentable over the Richmond et al reference, the Hengelein et al reference, and further in view of the Faunce reference and the Roese reference.

The Office Action rejects claim 24 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Richmond et al reference, the Hengelein et al reference, and further in view of the Faunce reference and the Roese reference.

Appellants respectfully traverse this rejection.

None of the applied references teaches or suggests the features of the claimed invention, as recited in claim 13, from which claim 24 depends.

The Faunce reference and the Roese reference do not remedy the deficiencies of the Richmond et al reference. Indeed, the Faunce reference and the Roese reference are not relied upon for these features.

Instead, the Faunce reference discloses a garment electrical connector for use with fabric, as seen in Figure 1 and as discussed in the Abstract.

The Roese reference discloses a lockable electric plug and socket connection which includes a mechanical latching mechanism as seen in Figures 6 and 7.

In stark contrast to the teachings of the Faunce reference and the Roese reference, independent claim 13 recites an electric interface for water-bearing household devices including at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough, and at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a

microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control.

As explained above, these features are important for reducing the complexity of the cable form for the electrical connection of the hydraulic and electronic components, thereby providing an inexpensive, flexible and modular arrangement of the hydraulic and electrical components for the operational control of the water-bearing household device.

Neither Faunce reference nor the Roesse reference addresses or makes up for the deficiencies of the Richmond et al reference and the Hengelein et al reference, as explained above.

Thus, none of the applied references discloses or suggests the subject matter defined by independent claim 13, from which claim 24 depends.

Appellants respectfully request reversal of this rejection.

(8) CONCLUSION

In view of the foregoing discussion, Appellants respectfully request reversal of the Examiner's rejections.

Respectfully submitted,

/James E. Howard/

James E. Howard

Registration No. 39,715

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BSH Home Appliances Corporation
100 Bosch Boulevard
New Bern, NC 28562
Phone: 252-639-7644
Fax: 714-845-2807
james.howard@bshg.com

CLAIMS APPENDIX

1 - 12 (Canceled)

13. (Rejected) An electric interface for water-bearing household devices comprising:
an electronic circuit board for operatively mounting to the water-bearing household device;
a program control;
at least one magnetic valve mounted to the circuit board in fluid communication with a liquid line of the water-bearing household appliance for controlling the flow of liquid therethrough; and
at least one electronic component for controlling the at least one magnetic valve with the at least one electronic component being a valve controller embodied in a microprocessor mounted to the circuit board and integrated into a component group that is connected to the program control.
14. (Rejected) The electric interface according to claim 13 and further comprising at least one sensor for detecting parameters applicable to the control of the liquid line including hydraulic parameters and non- hydraulic parameters, the at least one sensor being integrated into the component group and mounted to the circuit board.
15. (Rejected) The electric interface according to claim 13, wherein the liquid line is a selected one of a fresh water supply of a water-bearing household machine, a rinsing liquid circuit of a washing machine, and a washing liquid circuit of a dishwasher.

16. (Rejected) The electric interface according to claim 13 and further comprising a plurality of magnetic valves for controlling a plurality of liquid lines are integrated in the component group and mounted to the circuit board.
17. (Cancelled)
18. (Rejected) The electric interface according to claim 13, wherein at least one electrical connection is provided for the electrical connection of the component group to the program control of the water-bearing household device, the electrical connection being configured as a selected one of a group plug with a number of electrical contacts and a connection that is not a group plug with a number of electrical contacts.
19. (Rejected) The electric interface according to claim 13 wherein the circuit board is configured as a plug-in board that can be plugged with an electric connection into a complementarily configured slot in a household machine.
20. (Rejected) The electric interface according to claim 19, wherein a section at the edge of the plug-in board is configured as an electric connection with a plurality of electrical contacts.
21. (Cancelled)
22. (Rejected) The electric interface according to claim 19, wherein at least one of the magnetic valves and the sensors is arranged on at least one connector that is connected to the plug-in board by means of electrical leads.

23. (Rejected) The electric interface according to claim 22 wherein the connector for the at least one magnetic valve or sensor has a plurality of slots operable for electric contacting of the respective magnetic valve or sensor.
24. (Rejected) The electric interface according to claim 23, wherein the slots have means for mechanical location of at least one of the magnetic valves, the sensors, or for their electrical connections.

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EVIDENCE APPENDIX

None

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RELATED APPEALS APPENDIX

None